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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,428	08/14/2001	Hong-Kyu Park	B-4264PCT	9806
36716	7590	11/17/2004	EXAMINER	
LADAS & PARRY 5670 WILSHIRE BOULEVARD, SUITE 2100 LOS ANGELES, CA 90036-5679			LISH, PETER J	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/913,428

Applicant(s)

PARK ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,8-15 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5,8-13,15 and 18 is/are allowed.
- 6) ☒ Claim(s) 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/18/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5, 8-13, 15, and 18 have been fully considered and are persuasive. The rejection of these claims has been withdrawn. The rejections of claim 14 are maintained, however, because the limitations added by the amendment represent method limitations, which do not further limit the claimed product.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugeno et al. taken with Koshiba et al.

Sugeno et al. teaches a method of forming a cathode for a secondary battery, comprising mixing a manganese compound, such as manganese dioxide, with a lithium compound selected from lithium nitrate, lithium hydroxide, etc., and thereafter calcining the mixture at a temperature between 650 and 780 °C for an extended time, such as 12 or 16 hours (see examples 1 and 5).

Koshiba teaches a process for the preparation of manganese dioxide for alkali manganese cells. The manganese dioxide is heat treated at a temperature between 100 and 230 °C at a pressure below the saturated vapor pressure at the treatment temperature. While the exact pressure is not explicitly taught, the pressure range of the instantly claimed invention is viewed to be below the saturated vapor pressure; it therefore would have been obvious to one of ordinary

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skill at the time of invention to use a pressure within the instantly claimed range. While the treatment time is not explicitly taught, it would have been obvious to one of ordinary skill at the time of invention to treat the manganese dioxide for a duration within that claimed by the applicant, as the selection of a specific treatment time is viewed to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215.

It would have been obvious to one of ordinary skill at the time of invention to use the manganese dioxide produced by the treatment of Koshiba et al. in the process of forming an electrode, as taught by Sugeno et al., because Koshiba et al. teaches a manganese dioxide suitable for use in electrode materials having long discharge time and improved properties.

Although the process taught by Sugeno et al. taken with Koshiba et al. is not identical to that claimed, it is expected that the product of Sugeno et al. taken with Koshiba et al. represents a lithium manganese complex oxide powder with a spinel structure which is the same as that of the instantly claimed invention because the references teach the mixing and calcination of the required manganese and lithium compounds. The additionally claimed process limitations are not seen to further limit the product.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugeno et al. taken with Sako.

Sugeno et al. teaches a method of forming a cathode for a secondary battery, comprising mixing a manganese compound, such as manganese dioxide, with a lithium compound selected

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from lithium nitrate, lithium hydroxide, etc., and thereafter calcining the mixture at a temperature between 650 and 780 °C for an extended time, such as 12 or 16 hours (see examples 1 and 5).

Sako teaches the manufacture of dehydrated gamma-manganese dioxide having accelerated discharge reaction by treating the compound under conditions of temperature and time enough to allow the water to be lost without practically converting the gamma-manganese dioxide into beta-manganese dioxide. While the temperature of the treatment is not explicitly taught, it is expected that it be between 50 and 200 °C, because the transition to beta-manganese dioxide is known to start at about 200 °C. While the use of pressure is not explicitly taught, it is expected that the pressure of the treatment may fall within the range claimed by applicant, as a pressure of 0.1 dyne/cm<sup>2</sup> is within a normal fluctuation of atmospheric pressure and could thus easily occur on a slightly high-pressure day. While the treatment time is not explicitly taught, it would have been obvious to one of ordinary skill at the time of invention to treat the manganese dioxide for a duration within the range claimed by the applicant, as the selection of a specific treatment time is viewed to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215.

It would have been obvious to one of ordinary skill at the time of invention to use the manganese dioxide produced by the treatment of Sako in the process of forming an electrode, as taught by Sugeno et al., because Sako teaches a manganese dioxide suitable for use in electrode materials having accelerated discharge reaction and increased activity.

Although the process taught by Sugeno et al. taken with Sako is not identical to that claimed, it is expected that the product of Sugeno et al. taken with Sako represents a lithium

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manganese complex oxide powder with a spinel structure which is the same as that of the instantly claimed invention because the references teach the mixing and calcination of the required manganese and lithium compounds. The additionally claimed process limitations are not seen to further limit the product.

***Allowable Subject Matter***

Claims 1-5, 8-13, 15, and 18 are allowed.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

PL

A handwritten signature in black ink, appearing to read "Stuart L. Hendrickson".

**STUART L. HENDRICKSON**  
**PRIMARY EXAMINER**